

## CLAIMS

1. A human cancer-related gene *LAPTM4B*, comprising one of the following nucleotide sequences:

5        1) SEQ ID No: 1, SEQ ID No: 2, SEQ ID No: 3, or SEQ ID No: 6 in the sequence listings;

      2) Polynucleotide that encodes SEQ ID No: 4, SEQ ID No: 5, or SEQ ID No: 7 protein sequences in the sequence listings; and

10        3) DNA sequences having above 90% homology to the DNA sequences defined by SEQ ID No: 1, SEQ ID No: 2, SEQ ID No: 3, or SEQ ID No: 6 in the sequence listings, and capable of encoding proteins with the same or similar functions.

15        2. The human cancer-related gene according to claim 1, wherein the said gene is SEQ ID No: 1 in the sequence listings.

      3. The human cancer-related gene according to claim 2, wherein the said gene is SEQ ID No: 2 in the sequence listings.

20        4. The human cancer-related gene according to claim 2, wherein the said gene is SEQ ID No: 3 in the sequence listings.

      5. The human cancer-related gene according to claim 2, wherein the said gene is SEQ ID No: 6 in the sequence listings.

25        6. The human cancer-related gene according to claim 1 or 2 or 3 or 4 or 5, wherein the said cancers are liver cancer and some epithelium sourced cancers.

      7. The human cancer-related proteins, comprising

30        (1) amino acid sequence 4 and/or sequence 5 and/or sequence 7; or

      (2) the derived protein comprising amino acid sequence 4 and/or sequence 5 and/or sequence 7 with one or several amino acid residues being replaced, deleted, or added, but still have the same activity as the proteins which comprise amino acid sequence 4 or/and sequence 5 or/and sequence 7.

8. The protein according to claim 7, wherein the said protein comprises sequence 4 amino acid sequence in the sequence listings.

5 9. The protein according to claim 7, wherein the said protein comprises sequence 5 amino acid sequence in the sequence listings.

10 10. The protein according to claim 7, wherein the said protein comprises sequence 7 amino acid sequence in the sequence listings.

11. The proteins according to claim 7 or 8 or 9 or 10, wherein the said proteins are related to liver cancer and some epithelium sourced cancers.

12. The expression vectors of the gene according to claim 1.

15 13. The transfected and mutated cell lines of the gene according to claim 1.

14. The primers for amplifying the gene according to claim 1.

20 15. The promoter of the human cancer-related gene *LAPTM4B*.

16. The promoter according to claim 15, wherein the said promoter contains a nucleotide sequence of SEQ ID No: 8.

25 17. The reagents comprising various monoclonal and polyclonal antibodies as activity ingredients for the proteins according to claim 7.

18. An application of the human cancer-related gene according to claim 1, wherein the said gene is used in the preparation of reagents for cancer diagnosis.

30 19. The application according to claim 18, wherein the said cancers are liver cancer and some epithelium sourced cancers.

20. The application of the proteins according to claim 7 in the preparation of

reagents for cancer diagnosis.

21. The proteins application according to claim 20, wherein the said cancers are liver cancer and some epithelium sourced cancers.